UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,095	05/16/2005	Heinrich Liebisch	123171	3611

61807 7590 10/03/2008

MAXWELL TECHNOLOGIES, INC.
9244 BALBOA AVENUE
SAN DIEGO, CA 92123

EXAMINER	
MEHTA, MEGHA S	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
10/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/535,095	LIEBISCH, HEINRICH	
	Examiner	Art Unit	
	MEGHA MEHTA	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-25 and 27-42* is/are pending in the application.

4a) Of the above claim(s) *37-42* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-25 and 27-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. The Examiner apologizes for the oversight of the traversed restriction requirement in the previous office action and supplies the response below.

Applicant's election with traverse of group I in the reply filed on February 19, 2008, is acknowledged. The traversal is on the ground(s) that group I incorporates the limitations of group II. This is not found persuasive because while it may be true, this is not the basis for breaking unity between the inventions in a 317 National Stage Application. The shared technical feature of the inventions must be a contribution over the prior art. In the current situation, groups I and II have the following in common: an electro-technical device with a mechanical and electrical connection. Product-by –process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (MPEP 2113). Therefore, the brazing process of claim 22 is not read into the product of claim 37.

Unity between groups I and II is broken if another reference can teach this shared technical feature of an electro-technical device with a mechanical and electrical connection. US 6,440,182 Karasawa et al (cited in the previous office action) teaches an electro-technical device with a mechanical and electrical connection (column 3, lines 26-36 and figure 1). Thus, the electro-technical device is not a contribution over the prior art.

The requirement is still deemed proper and is therefore made FINAL.

Response to Amendment

2. The 112 rejections and abstract objection have been overcome.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 22-25, 27-29, 32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al in view of US 3,891,901 Booe et al, further in view of US 2002/0142211 Nakanishi et al and US 2003/0064242 Wittebrood et al.

Regarding claim 22, Karasawa teaches a method of connecting two pieces with a connecting agent, where the first piece is metallic and inherently has a solidification temperature and the second piece is metallic and orthogonal to the second face of the first piece and also inherently has a solidification temperature. The connecting agent is also metallic and has a lower melting temperature than the first two pieces. All three pieces are made of nickel. This is taught in column 2, lines 4-5, column 3, lines 26-55 and column 4, lines 1-2 and 13-16 and in figure 1.

Karasawa teaches the method. Karasawa does not teach that the method involves brazing or that the dimension of the second piece is greater than that of the first piece. However, Karasawa teaches soldering, which is an obvious variant of brazing to those of ordinary skill in the art. The dimension of the second piece would also be obvious to one of ordinary skill in the art because the second piece may be as thick or as thin as the artisan desires. It is dependent upon the desired final product. The claim states that the second piece is heated to "only melt the connecting agent." Karasawa melts the material on the second piece as well as the connecting

agent, but as this material is soldered together to form the bond, it then, is a part of the connecting agent.

Karasawa also does not teach that the first material is a foil or that there is a dielectric interfacing material between the foils. Booe does teach foils and a dielectric interfacing material in column 4, lines 48-50 and column 6, lines 35-36, respectively.

It would have been obvious to combine Karasawa and Booe because both are teaching methods of creating capacitors with electrodes. It would have been obvious to use the foils and dielectric material of Booe in the method of Karasawa because of the desired final product and the dielectric materials improve the charge-holding properties of capacitor plates.

Neither Karasawa nor Booe teaches a second or third material made of aluminum. Nakanishi teaches a second material made of aluminum in paragraph [0009]. Nakanishi does not teach a third material made of aluminum. Wittebrood teaches a connecting agent made of aluminum and 7% to 13% silicon with a melting temperature no more than 613°C in paragraph [0008].

It would have been obvious to combine Karasawa and Booe with Nakanishi and Wittebrood because they are all teaching the making of battery electrodes or aluminum products. It would have been obvious to include the pieces of Nakanishi and Wittebrood in the method of Karasawa because of the relatively low melting point and therefore ease of processing of aluminum.

In regards to claims 23, 24 and 36, Karasawa further teaches a connecting agent which inherently has a solidification temperature and is placed between the first and second elements to fuse them together in column 4, lines 20-28. Karasawa also teaches the heating of the second

piece without preheating in column 4, lines 44-50. Karasawa teaches the forcing of two pieces together during heating in column 4, lines 25-28. Karasawa does not explicitly teach the cooling of the connecting agent. However, this would be obvious to one of ordinary skill in the art because when a material is heated to melt and join parts, it must be cooled down to solidify and lock the parts in place.

Karasawa teaches the method of joining parts together. Karasawa does not teach specifics of claim 32: the dielectric material, foil arranged to have a free edge and the second piece with an electric terminal and a second face superimposed on the first face. Booe teaches these elements in column 6, lines 35-36, column 5, lines 56-62 and figure 8 and in column 9, lines 8-12, respectively.

It would have been obvious to combine Karasawa and Booe because both are teaching methods of creating capacitors with electrodes. It would have been obvious to use the foils and dielectric material of Booe in the method of Karasawa because of the desired final product and the dielectric materials improve the charge-holding properties of capacitor plates.

Karasawa teaches the method of joining pieces together. Booe teaches the dielectric material and foils. In regards to claims 25, 27 and 28, neither Karasawa nor Booe teaches controlled cooling to remove energy or similar and different solidification temperatures of the first and second pieces. However, it would have been obvious to one of ordinary skill to make these modifications. One would want to remove extra energy in order to strengthen the product by preventing thermal degradation. Additionally, one could choose the solidification temperatures of the two pieces to be similar or different based on the compositions of the pieces desired for the final product. One of ordinary skill in the art would be able to determine what

compositions are necessary for the pieces and the solidification temperatures are dependent upon those compositions chosen.

Regarding claim 29, Karasawa teaches the method of joining two pieces together. Booe teaches a first component comprising aluminum in column 6, lines 40-41, which inherently has a solidification temperature of at least 635°C. Neither Karasawa nor Booe teaches a second or third material made of aluminum. Nakanishi teaches a second material made of aluminum in paragraph [0009]. Nakanishi does not teach a connecting agent made of aluminum. Wittebrood teaches a connecting agent made of aluminum and 7% to 13% silicon with a melting temperature no more than 613°C in paragraph [0008].

It would have been obvious to combine Karasawa and Booe with Nakanishi and Wittebrood because they are all teaching the making of battery electrodes or aluminum products. It would have been obvious to include the pieces of Nakanishi and Wittebrood in the method of Karasawa because of the relatively low melting point and therefore ease of processing of aluminum.

5. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al in view of US 3,891,901 Booe et al, further in view of US 2002/0142211 Nakanishi et al and US 2003/0064242 Wittebrood et al as applied to claim 22 above, and further in view of WO 99/60323 Subhasish.

Karasawa teaches the method of joining. Booe teaches the foils and dielectric material. Nakanishi and Wittebrood teach aluminum materials. None of Karasawa, Booe, Nakanishi nor Wittebrood teaches the aluminum alloys required by claims 30 and 31. Subhasish teaches an aluminum alloy with up to 0.6% silicon on page 5 of the international publication. It would be

inherent for this composition to have a solidification temperature of at least 635°C because the elements present other than aluminum and silicon are present in amounts comparable to that of unavoidable impurities.

It would have been obvious to combine Karasawa and Booe with Nakanishi and Wittebrood because they are all teaching the making of battery electrodes or aluminum products. It would have been obvious to include the pieces of Nakanishi and Wittebrood in the method of Karasawa because of the relatively low melting point and therefore ease of processing of aluminum. It would have been obvious to use the alloy of Subhasish in the method of Karasawa because aluminum alloys with up to 1% Si have improved corrosion resistance.

6. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al in view of US 3,891,901 Booe et al, further in view of US 2002/0142211 Nakanishi et al and US 2003/0064242 Wittebrood et al as applied to claim 22 above, and further in view of US 6,291,806 Quick et al.

Karasawa teaches the method of joining. Booe teaches the foils and dielectric material. Nakanishi and Wittebrood teach aluminum materials. None of Karasawa, Booe, Nakanishi nor Wittebrood teaches induction and electromagnetic field heating devices. Quick teaches induction and electromagnetic field heating devices used to heat the second piece in column 9, lines 56-65 and lines 39-49, respectively. Quick does not teach cooling of the devices, but the cooling of the devices would be obvious to one of ordinary skill in the art because when a material is heated to melt and join parts, it must be cooled down to solidify and lock the parts in place.

It would have been obvious to combine Karasawa and Booe with Nakanishi and Wittebrood because they are all teaching the making of battery electrodes or aluminum products.

It would have been obvious to include the pieces of Nakanishi and Wittebrood in the method of Karasawa because of the relatively low melting point and therefore ease of processing of aluminum. It would have been obvious to combine Karasawa and Booe with Quick because they are all teaching the bonding of workpieces. It would have been obvious to include the bonding of Quick in the method of Karasawa because of the various types of bonding that are sufficient for the joining of workpieces.

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,440,182 Karasawa et al in view of US 3,891,901 Booe et al, further in view of US 2002/0142211 Nakanishi et al and US 2003/0064242 Wittebrood et al and US 6,291,806 Quick et al as applied to claim 33 above, and further in view of US 4,720,311 Hutton et al.

Karasawa teaches the method of joining. Booe teaches the foils and dielectric material. Quick teaches induction and electromagnetic field heating devices. Nakanishi and Wittebrood teach aluminum materials. None of Karasawa, Booe, Nakanishi, Wittebrood nor Quick teaches rotation of pieces for uniform heating as required by claim 35. However, Hutton uniformly heats a workpiece by rotating it over the induction coil in column 3, lines 39-43.

It would be obvious to one of ordinary skill in the art to rotate the piece in order to ensure uniform heating because the induction coil does not wrap around the object to heat evenly on all sides. This ensures a better quality product.

Response to Arguments

8. Applicant's arguments filed July 7, 2008, have been fully considered but they are not persuasive. Applicant argues that Karasawa does not teach the constituents to be aluminum. The current combination of Karasawa, Booe, Nakanishi and Wittebrood teaches the limitations of

amended claim 22. Applicant also argues that Booe teaches a nickel-aluminum alloy that does not satisfy the limitations of the claim. However, "main constituent" does not define a range of percentages. Even with a 75-95% nickel composition, 25% aluminum still constitutes a "main constituent". Additionally, "main constituent" does not exclude the existence of other materials in the composition.

9. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., capillary action) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

10. Applicant further argues that Wittebrood teaches joining pieces that are parallel to each other, not perpendicular. However, the configuration of the pieces is only design choice and does not affect the bonding process.

11. Applicant argues that Subhasish has the incorrect volume of silica. However, this is not what Subhasish is used for. He only teaches a first and second metallic material with silica in the aluminum. The particular ranges are not claimed in claims 30 and 31. Additionally, although the product of Subhasish is not identical to the instant invention, one would still look to Subhasish for it's general teaching of silica in aluminum.

12. Applicant argues that Quick does not teach orthogonal pieces. However, the configuration of the pieces is only design choice and does not affect the bonding process. Also, Quick is not being used to teach a brazing process with an aluminum connecting agent. Quick

teaches induction and electromagnetic heating to heat pieces. The combination of the previously discussed references account for the remainder of the method as discussed above.

Applicant argues that Hutton does not teach orthogonal pieces brazed together with an aluminum connecting agent. Hutton is used to teach the known step of rotation. The combination of the previously discussed references account for the remainder of the method as discussed above.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGHA MEHTA whose telephone number is (571)270-3598. The examiner can normally be reached on Monday to Friday 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Megha Mehta/
Examiner, Art Unit 1793

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 1793